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ADDRESS

IN OPHTHALMOLOGY, OTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

DELIVERED IN GENERAL SESSION AT THE THIRTY-SIXTH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, MAY 1, 1885.

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MR. PRESIDENT AND GENTLEMEN:

The time-honored custom, in accordance with a by-law of our association, of an annual report of the year's advances, by the chairman of this or that section, is one not so easy to comply with, because the advances in any one branch of medicine or surgery in one year are not always tangible enough for specification. Medicine and Surgery in all their branches go forward and onward at all times, imperceptibly and slowly, little by little, each little adding to what has been known before, each worker and observer adding his mite to the irresistible onward march; but we cannot always say that this or that special addition to our knowledge was made in the last year. At times the steady progress forward brings us to a point where the medical horizon is lighted up, like a meteor flashing suddenly across the heavens, by some apparently brilliant discovery, whether the natural outcome of such progress which has led up to it, or the result of purely accidental causes, or empirical experimentation. But how often have such been meteors indeed, coming like a flash, rousing up the whole medical world, and disappearing with the same rapidity, to be lost in the gloom of empiricism. The examples of this are innumerable in every department of medicine and surgery. Operations, methods of treatment, remedies, have been extolled and lauded as making an era in medicine; have been universally adopted, ran a brilliant career for a while, and died the death. What better example of this can be found than the operation of "Optico-ciliary Neurotomy" in eye surgery, which had such a brilliant reception a few years back. Everybody did it, but its apparently good results proved fallacious; it did not stand the tests of time; and what ophthalmic surgeon performs that operation to-day?

Again, look at Graefe's modified linear extraction of cataract, which universally replaced the flap operation and held its own so long. It has been recently said that nothing remains of it but the knife and the iridectomy. And how long will even this much last? They are tinkering now at the remains, and the French school is in a fair way to discard irredectomy altogether, and return very nearly to the old flap extraction again.

In the face of these examples it is difficult for any one to say what is, and what is not, an advance in the right direction. In looking back at the literature of, and the work in, the field of Ophthalmology, Otology, Rhinology and Laryngology for the past year, we can't help but see the steady onward march in these special branches, more particularly in rhinology. Advances have been made both by grafting new ideas and by applying the pruning knife to old ones. In ophthalmology much has been done by both methods. The researches into the pathology of sympathetic ophthalmia have been of considerable value; but the vexed question of its mode of transmission has not been as yet satisfactorily settled; whether it is a reflex neurosis, or a septic infection, is still undecided. However, the opinion is steadily gaining ground that the optic nerve and its sheath, forming as it does a direct connection between the uveal tracts, along which micro-organisms can pass, play the most important rôle in communicating sympathetic disease.

In the treatment and prophylaxis of sympathetic ophthalmia, enucleation of the eye-ball holds such prominent place that its modifications or substitutes are necessarily of great importance. The failure of the recently much-lauded substitute, "optico-ciliary neurotomy," has led to another effort to replace enucleation by what is called "evisceratio, or exenteratio bulbi," the principal apostle of which is Alfred Graefe. It consists in cutting out the cornea and corneo-scleral border behind the insertions of the ciliary bodies and scooping out the entire contents of the sclerotic, leaving that membrane intact and closing the conjunctiva over it by sutures. The advantages claimed are, that it diminishes the attendant risks of enucleation (quite a number of deaths being on record as a result of this operation); that there is no danger of meningitic complications, as the lymphatic vessels of the capsule (Tenon's) are not opened, and that it affords a much better and more movable stump for an artificial eye. But the healing process is much more tedious than after enucleation. The originator of this operation was, however, Dr. Henry Noyes, of New York, and not Prof. Alfred Graefe. Dr. Noyes speaks of it in his book, p. 189, in treating of Hypopyon Keratitis.

The treatment of detachment of the retina, a subject of great importance to ophthalmologists, has seemingly had some advance, although still purely experimental. Whilst iridectomy and galvano-cautery puncture have been tried with varying success, Wolfe's scleral puncture seems to have received most favor and gives the best results, although, as far as I can make out, it is merely a modification of Graefe's operation.

The treatment of purulent ulceration of the cornea by the galvano-cautery, although not an offspring of the past year, seems now for the first time to have obtained a foot-hold in ophthalmic therapeutics, because of the discovery of the anæsthetic properties of cocaine.

In regard to "Trachoma," probably the most intractable of eye affections, it was thought a little more than a year ago that its death knell had been sounded in the "Io triumphe" that greeted the advent of Jequirity. But the enthusiasts on this subject soon received a shock in the reports of its failure to cure, and worse still, in its disastrous effects in entirely destroying eyes subjected to its influence.

These unfortunate results not only dampened the enthusiasm with which it was received, but led many to discard it altogether, as involving more risk of destruction than chance of relief.

If the past year had done nothing else, it has given us more certain indications for the use of Jequirity, and taught us that it is a valuable remedy in suitable cases. The great danger of diphtheritic ophthalmia, with destruction of the eye following its use, should not be lost sight of. It should never be used in folliculer granulations, nor when the conjunctiva is swollen and succulent, when there is great hyper-secretion or any acute inflammatory symptoms present. Even in undoubted cases of true trachoma it seems rather a remedy for the accompanying pannus of trachoma than for the granulations themselves. It is preferably applicable to, and beneficial in cases of dense pannus. Even then its effect should be closely watched and controlled, and not over a 2 per cent. solution should be used, and not repeated for twenty-four hours. In mild cases of pannus a solution of one-fourth of 1 per cent. is sufficient. As our experience of the remedy accumulates, and the indications become more and more precise, I doubt not that it will prove more and more valuable. For my part, I handle it with the same caution that I would dynamite, in constant fear of an explosion, although where I live the occasions for its use are few and far between. During the six years I have lived in Virginia, with a large and constantly increasing clientèle, I have never seen, either in dispensary or private practice, a single case of trachoma in the negro race, and only eight or ten among the whites.

Probably the most important scientific work of the past year in ophthalomology has been Landolt's labors to find an exact method of determining the amplitude of the convergence (partly published in the thesis of Miss Ellaby, 1884, and more fully in the "Traité d' Opthalmologie." Wecker-Landolt, in the "Archives d' Opthalmologie," April, 1885.) None of the methods heretofore given are at all exact or reliable. Graefe's test, the one most commonly in use, being frequently valueless, and probably on account of this inaccuracy, the frequency of the so-called muscular asthenopia is much exagerated. Binocular fixation for short distances is one of the most important functions of the eye, and it taxes both the internal recti and the ciliary muscles. Any disturbance in the normal relation of these two acts brings about asthenopia. Hence the exact determination of the converging power is just as important in dealing with these cases, as the determination of the refraction and accommodation power. And it was here that we have always experienced our difficulties, inasmuch as we had fixed formulas and methods of determining refraction and accommodation, and none but imperfect or unreliable ones for the convergence. The amplitude of convergence has been determined by others with equal accuracy, but no definite method was formulated that gave satisfaction. Landolt's method is the best solution thus far of this subject. He has taken the metric angle (the point of intersection of the visual lines) as suggested by Nagel for a unit of measure of the convergence, (am.) The amplitude of convergence is represented by the difference between the maximum (p. am.) and the minimum (r. am.) The maximum of convergence can be determined by his opthalmodynamometer, and when the punctum remotum of the convergence is at a *finite* distance, which is abnormal, it can be measured in the same way. But as the majority of eyes can even diverge somewhat for distance the minimum of convergence is nominally a negative quality. He has determined the maximum or punctum proximum of convergence to average 9. 5 am. (10½ cm. from the eye), the minimum, 1 am.; hence the amplitude of C. (a-p-r) is about 10.5 am. Most of our occupations are at 30 or 35 cm., and it therefore seems that we have an amplitude of convergence far in excess of the demand. In reality, however, experience proves that close and continuous work requires about ⅔ of the convergence force to be held in reserve. For example, when reading we use 3 am. of convergence, but in order to keep up the work without fatigue we will require the reserve force of 6 am., or the total amount of the convergence. This is equally true of the accommodation. The value of this *quota* of convergence or accommodation is not a fixed quantity but always bears a fixed relation to the total amount of convergence of the individual. We must, therefore, determine its value in each case. As the maximum of convergence ought always to be three or four times greater than the convergence corresponding to the distance of the work, asthenopia must result if this is not the case. I have not space or time to further develop this subject, but its practical value on the determination and correction of muscular insufficiency by operation or otherwise is apparent.

Bearing closely upon the same subject of troubles of the recti muscles and the operative procedures for this correction, are the investigations of Motais in regard to the construction and relations of the capsule of Tenon, which he claims to be composed of

two separate and distinct membranes, super-imposed one on the other; an internal or bulbar capsule, a serous membrane for the enarthrodial articulation of the eye, the other an aponeurosis common to the muscles. This may influence and modify the operations for strabismus and muscular asthenopia, particularly the readjustment or advancement of the internal rectus muscle.

COCAINE.

But the most brilliant event of the year was the introduction of cocaine into the surgery of eye, ear, throat and nose affections.

Since Dr. Koller, of Vienna, first called the attention of the profession a little more than six months ago to the local anæsthetic effects of this remedy, which has been in the pharmacopeia for twenty years, so much has been said and written about it that it is useless to give it more than a passing mention. Already its position in opthalmic, aural and throat therapeutics is a permanent one.

Its effect upon the eye is marvelous and in a less degree almost equally so on all mucous surfaces. Already we wonder how we have done without it, but like all new remedies we try to make it do more than we can expect, become disgusted because we cannot do so and report the failures of cocaine. Without doubt we will also meet with people of a peculiar idiosyncracy upon whose mucous surfaces it will not produce its physiological effects; or, peculiarly susceptible to its influence with alarming results; this should not make us decry such a boon to suffering humanity, for if we did and threw aside all other remedies to which the same reasoning might apply what would be left in the pharmacopeia? When its exact applicability has been determined by experience its range of usefulness will be found a very large one.

Its specific action in paralyzing sensation of mucous surfaces seems to be due to its stimulation of the vaso-motor nerves, causing contraction of the vessels of the terminal bulbs of peripheral nerves and diminishing their blood supply.

It is seemingly, therefore, a stimulant of the sympathetic, either by reflex action or by direct influence upon the peripheral nerves. That its influence is upon the sympathetic and not by local paralysis of the sensory nerves, is probably demonstrated by the relaxation of the orbicularis palpebrarum, or rather by the tonic spasm of the so-called Müller's muscles of the eyelids, by the dilatation of the pupil without paralysis of accommodation, and by the collapse of acutely swollen turbinated corpora cavernosa.

However this may be, it has created a revolution in ophthalmic surgery in diminishing by more than half the necessity of chloroform or ether narcosis in operations, besides the other advantages gained from the local anæsthesia in the treatment of many painful and annoying eye affections. By the local anæsthesia and the relaxation of the lids we are enabled to examine the anterior parts of the eye, and by the dilatation of the pupil to use the ophthalmoscope with more satisfaction. One fact of importance in relation to such operations as cataract extractions without iridectomy, corelysis, etc., is, that the dilated pupil does not contract when the humor is drawn off, as is the case with other mydriatics.

It is most reliable in cataract extractions, in sclerotomy (with addition of eserine), in all conjunctival and corneal operations, and in strabismus; it is of great value in enabling us to note the exact tension of the eye (although its application somewhat reduces the existing tension); it is useful and preferable to atropine in central opacities of the lens, and according to Weber, in corneal perforations with prolapse of iris, which it tends to reduce. It is almost useless in children, or in stupid, obstinate or very anxious patients, who will be as unruly during operations as if it had not been used; in complicated cataract, in iridectomy for glaucoma when the eye is much inflamed, and in all prolonged operations, such as the advancement of a muscle.

It produces some, but very little effect in cases of cyclitis or irido-choroiditis, or in inflamed eyes with submucous infiltration, as in hypopyon keratitis, in enucleation, and on the sensibility of the iris in iridectomy. Dr. Eugene Smith, of Detroit, however, injected it into the anterior chamber before making the iridectomy, with the result of perfect anæsthesia and no bad results.

In enucleation, if the eye is not sensitive to pressure, cocaine produces sufficient anæsthesia to make it a bearable operation, especially if the solution is flowed over the insertions of the muscles after their exposure; but if sensitive to pressure from ciliary irritation, cocaine produces no appreciable effect, the mere pressure of the strabismus hook causing pain. I have performed over 200 operations under its influence, and only in very few cases had to resort to chloroform or ether; I have remarked that where there is considerable thickening of the submucous tissues, it does not produce its characteristic effect. In a recent case of rapidly advancing hypopyon keratitis, after trying every other treatment, I had recourse to Saemisch's operation. The conjunctiva and the subconjunctiva were much swollen and thickened. A ten per cent. solution frequently repeated for twenty minutes produced so little effect that the operation gave exquisite pain, which continued for some time afterwards. My experience is that its effect on the eye is produced in from two to ten minutes, and passes off in about half an hour, unless the effect be kept up by repeated applications, which it can be indefinitely.

As to the dangers and failures published by some authors, I am inclined to make light of them because of my own happy experience with the drug. The failures to produce physiological effects on the one hand, and the exaggeration of its effects (notably the case of Dr. Stephens) on the other, may have been due to an idiosyncrasy against the drug. Moreover, in some of these cases the symptoms reported were only such as I have frequently seen from nervous shock after eye operations without narcosis. I have seen it used with great freedom locally in eye, ear, throat and nose affections, over one grain injected hypodermically, and know of a person who took five grains by the stomach at one dose, and have not yet

encountered any of the reported constitutional symptoms.

In otology, rhinology and laryngology it is also a great boon, enabling us to make satisfactory examinations in sensitive cases in which they would otherwise be almost impossible, and to perform such operations as removal of polyp of the ear and nose, paracentesis of the drum head, to apply the galvano-cautery to the naso-pharyngeal space, and to pass instruments through the nostrils, as, for example, the cold snare, for growths and hypertrophies. Dr. Jellinch, of Vienna, was the first to apply it to the diagnosis and treatment of naso-pharyngeal and laryngeal troubles. In colds in the head, when the nostrils are obstructed by the swollen tissues, the application of a ten per cent. solution will cause shrinkage of the turbinated corpora cavernosa and restore the patency of the nostrils. This effect is due to its stimulant action on the vaso-motors, constricting the blood-vessels and reducing the blood supply, and is equally applicable to many cases of chronic turbinated hypertrophy, although it does not so affect them all. I have met cases in which after repeated applications there was no shrinkage, because of the density of the submucosa, and where, for the same reason, very little anæsthetic effect was induced, just as in the inflamed conjunctiva with chronic subconjunctival thickening. Since its introduction, the necessity of educating the throat to the manipulation with instruments has been done away with, as one application so diminishes its sensibility that gagging and retching are prevented. In ulcerative laryngitis and in ulcerative sore throat, this same effect enables the patient to take nourishment in comparative comfort.

This is but a meagre and brief review of the action of this invaluable addition to our armamentarium, but it covers in a short space the whole field of its known usefulness in the special work to which I have referred. Probably no remedy ever was so extensively used and investigated in such a short time, and we have possibly not yet reached the limit of knowledge as to its application. Time and further experience only will do this for us.

Cocaine is, as it were, the connecting link in the year's work between the science of ophthalmology and the fields of otology, laryngology and rhinology, and brings us to the consideration of these subjects.

REFLEX NEUROSES OF THE NOSE.

In these fields the most decided advance has been in the investigations tending to the solution of the vexed and important questions regarding the relation of nasal pathology to certain neuroses heretofore referred to other causes. That a "reflex producing area," exists in the nasal fossae has been demonstrated by the investigations of Prof. Hack, of Freiburg, and Dr. John Mackenzie, of Baltimore, working independently of each other but arriving at the same practical conclusions, although differing somewhat as to the exact locality. Dr. Mackenzie claims that the "sensitive area" is principally confined to the posterior end of the inferior turbinated tissue, and the septum opposite, the part dominated by the spheno-palatine nerve and that the reflex phenomena arising from its irritation (such as cough, asthma, hay fever, etc., etc.), in some persons and not in others, is due to a certain abnormal excitability of the *reflex* (or vaso motor) *nerve centres*; but, that such reflex phenomena (and he speaks particularly of so-called hay asthma), cannot take place without engorgement of the turbinated tissue, the main spring of the machinery which puts the pathological process in motion. Prof. Hack at first claimed, that the reflex phenomena started primarily from engorgement and irritation of the anterior end of the lower turbinated tissue, and only secondarily from irritation of other localities, although in his last publications he has somewhat deviated from this view. He considers, however, the point of greatest excitability to be at the *terminal* filaments of the nerves in the nasal mucosa instead of the nerve centres themselves. Both Hack and Mackenzie, whilst differing as above stated, agree in the mucosa over the erectile tissue of the turbinated bones, and especially the *lower one*, being the principal or sole agent in the production of reflex phenomena. That this may be so in many cases, is supported by clinical experience, and Dr. Roe, of Rochester, has adopted the same view as a result of his observations. Prior to the publications of either of these authors, Drs. Daly, of Pittsburg and Fraenkel, of Berlin, had called attention to the reflex asthma, accompanying pathological changes in the nasal fossæ, and which was relieved by the removal or cure of the pathological conditions; but neither attempted to localize or to define any special sensitive area. The observations of others, would tend to show that the limitation of the reflex producing power to any one part of the nasal mucosa, is too contracted a view of this very important question, because the probability is, that reflex phenomena are produced by sensitiveness of other points of the nasal mucous membrane with irritation of its sensitive nerves, as elsewhere in the body, for example in the sexual organs. Again, it is doubtful if engorgement of the turbinated tissues is essential to the production of these phenomena as claimed by Hack and Mackenzie. If so, why do such a small minority of of turbinated hypertrophies cause asthma? Hopman (Cologne), has reported cases of asthma occuring in atrophic rhino-pharyngitis, which were proved of reflex origin, because they were relieved by the use of Gottstein's wool tampons. Bosworth has also recorded a case of recurring spasm of the glottis of reflex origin in a subject of the same disease which was cured by treatment of the intra-nasal trouble. I have recently had under treatment, a case of obstinate "reflex cough" in a case of rhino-pharyngitis atrophica with very spacious nasal fossæ, with shrinkage instead of swelling of the turbinated tissues, which has been entirely relieved of the cough by the improvement of the local diseases.

Whilst the investigations on this subject are of great and lasting value to the science of rhinology, and all honor is due to the investigator, these clinical facts show that much is yet to be done for a proper and satisfactory elucidation of the question of the relation of nasal troubles to these various reflex disorders, heretofore supposed to arise in the larynx,

the bronchi, the stomach, or in some obscure nervous disturbance. It is a question of paramount importance, more especially in relation to that intractable affection known as hay asthma and megrim or sick headache, and one of equal interest to the general practitioner and to the specialist. The etiology of these disorders being elucidated, enables us to apply a rational treatment with more probability of cure than the heretofore empirical methods could give us. The good results of the above observations in treatment have been demonstrated by the number of recorded cures.

Cases of obstinate irritative cough, more especially annoying at night, have been cured by simply ridding the patient of a slight chronic rhinitis, which caused the cough by the irritation of retained secretion on sensitive spots of the nasal mucous membrane. You are all familiar with the efficacy of the old nursery remedy of a drink of water for a child's cough at night, which is explained by its ridding the posterior nares and pharynx of any secretion that might have accumulated and which was the irritating cause; and also in all probability there can be found sensitive spots in the pharynx, the irritation of which will cause reflex phenomena. The record of the cases of reflected neuroses of the nose, includes besides cough, megrim or sick headache, cephalalgia, tinnitus aurum and giddiness unaccompanied by deafness, otalgia, certain apparent disturbances of the circulation, such as slight and recurring œdema of the face and eyelids, asthmatic attacks, and that annoying group of symptoms known as hay fever, hay asthma, rose cold, etc., etc., all of which have been shown to be caused by pathological nasal changes and cured by their removal. I have also met a case of recurring conjunctivitis of same causation. Any treatment therefore of these affections, which, in the face of these investigations and clinical facts, would leave the possibility of nasal causation, by reflected irritation out of the question, would be, to say the least of it, highly unscientific. But in tracing the nasal relation, the question arises, as to what symptoms about the nasal mucosa we are to look for to give us any positive ground to assume that we are dealing with a reflex neurosis of the nose. I doubt if in the present state of our knowledge, this question can be definitely answered.

In many cases there would be frequent sneezing, a watery discharge from the nose, and occasional and intermittent stoppage of one or both nostrils, possibly some slight and fleeting ædema of the face; in others these might be wholly or in part absent.

But still, it is all-important to have a proper nasal examination made, more especially in the absence of any other defined causation. A careful examination of the nose might reveal swelling of the turbinated corpora cavernosa; or the use of the probe would show the sensitive spots by the irritation caused from contact, giving rise to sneezing, asthmatic breathing, neuralgic pain, notably toothache, possibly gastric disturbances, or sometimes one-sided perspiration, especially of the extremities.

In hay fever, however, we do not need these guides to a diagnosis, nor can there be any doubt because we are all so familiar with the group of symptoms known by that name, and known heretofore as the disgrace of the Rhinologist as trachoma is of the ophthalmologist. Hence the proof that it is a reflex phenomenon of certain intra-nasal changes, the special irritation of the sensitive spots or structures being set up by various causes, whether pollen or other agents, whether periodically or at irregular times, is a great advance in the right direction. Possibly Dr. Mackenzie's theory of an abnormal excitability (inherited or acquired) of the reflex nerve centres being the essential principle of the reflex action instead of excitability of the terminal fibres of the nerves (vaso motor, or vaso dilator) is more acceptable, at least to my mind, whilst not agreeing with him in the necessity of engorgement or swelling of the turbinated tissues in order to induce reflex phenomena. I think that this idiosyncratic excitability of the reflex nerve centres explains better the different forms this reflex neurosis takes in different individuals from irritation of the same or corresponding sensitive spots in the nasal mucosa. But here as elsewhere, when dealing with the sympathetic and its functions we are wandering in a maze of uncertainty and speculation that belongs rather to experimental physiology. The treatment should be directed to diminishing the tendency to irritation of the sensitive area or spots on the nasal mucosa by both internal and local treatment. Failing in this the sensitive areas, which must be carefully localized with the probe, should be destroyed by caustic agents or by the galvano-cautery. Latterly much has been written about the use of the galvano-cautery, and probably as a result of this its use is likely to run into abuse. It is, undoubtedly, a very valuable agent in the treatment of nasal affections, but we should be careful in selecting appropriate cases for its application. Whilst considerable success has attended this line of treatment in the reflex neuroses, still relapses occur, and make us look forward to the further light on the subject that greater experihnce will give.

ADDRESS IN DENTAL AND ORAL SURGERY.

DELIVERED IN GENERAL SESSION AT THE THIRTY-SIXTH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

BY WALTER W. ALLPORT, M. D.

OF CHICAGO, ILL.

The introduction of cocaine as a local anæsthetic, and the more general use of peroxide of hydrogen ($H^2 O^2$) in the treatment of dental and oral diseases, are the principal advances made in the medical department of this practice during the year for which this report is made.

The two forms of cocaine which have been most generally used in surgery are the hydrochlorate and the oleate. In operations in the mouth involving the mucous membranes, together with the immediately subjacent tissues, these preparations of the drug have proven so efficient that there is little ques-

tion as to its value as a local anæsthetic in such cases. But its action upon deeper structures, such as involve the roots of teeth, is so uncertain as to render its practical benefits questionable in the operation of extraction. In the surgical treatment of pockets caused by pyorrhea alveolaris, the anæsthetic effect of this agent is often so great as to render this sometimes very painful operation comparatively painless, and its employment in such cases should rarely be dispensed with. In the treatment of hypersensitive dentine as well as in the removal of tooth-pulps, its action as an anæsthetic has, under some circumstances, seemed to be all that could be desired. But in far the greater number of cases it has proved of little practical value. More recently however, a new form of cocaine, known as the citrate, has been introduced in Germany by Merck, and is now being manufactured by McKesson and Robbins, of New York. In a series of experiments, conducted by Dr. John S. Marshall, of Chicago, it has been shown that for operations upon sub-mucous tissues or in the extraction of teeth, it seems to possess no special advantages over the preparations previously named. But when applied to dentine or the pulp, its action —although not always positive—seems to be more reliable, especially upon the dentine, and gives promise of better results. Under favorable conditions it produces anæsthesia of the parts in from five to ten minutes, and the duration of the effect is of sufficient length to afford time for the preparation of the cavity. This effect has, in some cases, been prolonged for more than hour. The pulp has been extirpated without pain after the drug has been applied in from three to twelve minutes.

If the citrate of cocaine be kept in solution for more than three or four days, it decomposes and loses its active properties. As introduced by Mr. Merck for dental purposes, it is made into pills by incorporating it with gum tragicanth dissolved in glycerine, each pill containing $\frac{1}{8}$ grain of the citrate. In this form it keeps well. A pill is applied to the sensitive cavity and covered with a cotton pledget, moistened in tepid water. It should be allowed to remain from five to twelve minutes, when—if at all—the desired result is produced. In twenty per cent of the cases where this remedy has been employed, it has proven unsuccessful, but it is hoped that this percentage will be reduced by a better knowledge of the drug and the improved methods of its preparation and use.

With this end in view and at the suggestion of Dr. Marshall, McKesson and Robbins are now manufacturing granules containing one-sixteenth of a grain of the citrate of cocaine, without glycerine or any other saccharine excipient, so that the obtundent may act more promptly than it can in the presence of sugar.

The peroxide of hydrogen, ($H^2 O^2$), although not a new remedy, has only within the last few years gained much prominence in the treatment of surgical diseases. One of its uses in dental and oral surgery, is in blind or deep-seated abcesses, such as arise from roots of diseased teeth. As the tendency of pus is always downwards, when these cases occur in the lower jaw, it is not infrequent that the abcess, if left to itself, and sometimes even after the tooth is extracted, will point through the external tissues at the lower margin of the jaw, and occasionally downwards between the muscles of the neck and open at various points, even as low down as the clavicle. The usual treatment in such cases, is to extract the tooth and evacuate the pus through the alveolus, but it often happens that the formation of pus and the continuance of suppuration is not checked, and the abscess points, or is opened through the external tissue of the face or neck, leaving, when healed, a disfiguring scar.

By injecting peroxide of hydrogen into such abscesses before they point through the external tissues, this serious disfigurement can usually be averted, and the suppurative process is materially shortened. It is also a valuable aid for the evacuation of the purulent contents of the antrum of Highmore, in catarrhal and suppurative inflammations, and especially so where the sinuses are divided into two or more pockets by bony septi. These cases are often protracted by the inability of the surgeon to perfectly evacuate them. But with this preparation it becomes a simple matter, after access has been gained to the cavity by the extraction of a tooth or the perforation of its external wall in the proper place at the juncture of the cheek with the alveolar border. A free opening must always be made for the escape of the contents, in order to avoid pressure from the rapid evolution of gas. Two or three applications of a drachm each is usually sufficient to completely empty the sac.

It is used with most gratifying results in the treatment of pyorrhea alveolaris, and is an invaluable agent in treating pulpless teeth, as by its action, all decomposed matter from the pulp chamber and dentinal tubuli is readily ejected; thereby removing the most fruitful causes of the discoloring of this class of teeth, of inflammation of the peridental membrane, as well as alveolar abscesses.

The efficacy of peroxide of hydrogen depends upon the ease with which it is decomposed into oxygen and water. Pus is one of the many substances which causes this decomposition. Hydrogen peroxide acts first, chemically, and then mechanically. When the decomposition takes place the oxygen is set free and escapes from a liquid to a gaseous form; this expansion of the gas distends the pus cavity, and as it escapes from the orifice, it carries much of the pus with it, and its application should be repeated until all purulent accumulations are evacuated. The liberated oxygen, being in a nascent or active condition, rapidly oxydizes the products of suppuration and destroys many of the micro-organisms of suppuration[1]. Hence it is a disinfectant and anti-septic.

Finally, peroxide of hydrogen, after its decomposition, leaves no material in the system which is foreign to the system itself and it is therefore one of the most efficient and harmless disinfectants and antiseptics that can be used, in all forms of purulent inflammation.

[1] See Gradle on "Bacteria and the Germ Theory of Disease," pp. 39 and 151.

MEDICAL PROGRESS.

ANATOMY AND PHYSIOLOGY.

(*Concluded from page 684.*)

THE CHOLERA BACILLUS.—In the neutralized meat-infusion with peptone, made solid by agar-agar, the bacillus grows fairly rapidly; but it does not produce any liquefaction of the material, nor is the growth distinguishable from that formed by many other kinds of bacteria. Indeed, it is a very curious fact that agar-agar material is of very little use, compared with gelatin, as a medium for distinguishing bacteria from one another, many forms growing almost in precisely the same way in it. On the cut surface of boiled potatoes, the bacillus does not grow at a low temperature at all; but, at the body-temperature, it grows fairly rapidly, and forms a brownish layer, which, according to Dr. Koch, closely resembles that formed by the bacillus of glanders. It grows readily on blood-serum, at the temperature of the body, and liquefies it. When grown in meat-jelly, containing 3 per cent. of peptone, a smell is evolved of a somewhat fæcal character, but not very strong. This smell is said by Nicati to resemble the characteristic odor of cholera-evacuations; but with regard to this, I cannot speak from personal knowledge, for I did not pay particular attention to the odor of the cholera-evacuations. When grown in meat-jelly containing no peptone, or only one per cent., I have not detected any odor at all. Dr. Koch has stated that these bacilli, when dried rapidly, lose their vitality; in three hours, they are completely dead. I have had no difficulty in confirming this observation.

Is this organism peculiar to Asiatic cholera, or not? The extreme importance of this question, in presence of the difficulty in getting decisive evidence one way or another from animals, will be evident to all, and I shall return to this point subsequently. In the meantime, it must be evident that, as it is the almost unanimous statement of various observers that this organism is always present in Asiatic cholera, it follows that, unless it be peculiar to this disease, it should be widely distributed throughout the world, and should, therefore, be readily found. Although my investigations on this matter are much more complete than on the first point, I need not take up much space with its discussion, as I have entirely failed to find this organism except in cases of Asiatic cholera. A few remarks on the materials examined will, therefore, be sufficient.

But, in the first place, I must point out that there are other comma-shaped bacilli than those found in cholera, which are, however, easily distinguishable from the latter. Of these, two liquefy gelatin, and must be more specially alluded to, namely, Finkler's and Deneke's or Flügg's. Another has also been discovered by Miller in a carious tooth, which very closely resembles Finkler's and is probably the same, so that I need not describe it specially. For the opportunity of studying these bacteria, I am indebted to Dr. Koch, who sent them to me.

Finkler's comma-bacillus was found by him in an epidemic of cholera nostras in Bonn, and was at first thought to be identical with the organism of Asiatic cholera; but it is now been clearly shown to be a dif ferent organism. When examined without staining, it is seen to be larger than the cholera-bacillus, and the curvature is not so marked. The spirillar forms are also rarer, and the turns are not so numerous. It grows rapidly in gelatin; the colonies are round, smooth, and it liquefies the gelatin extremely rapidly. In the test-tube cultivation, the gelatin becomes very rapidly fluid, so that, in twenty-four hours, it may reach the margin of the tube at the surface, and also extend down to the bottom of the needle-track. The fluid is also uniformly muddy. On potatoes, it grows rapidly at the temperature of 18° Cent., forming a thick greyish-yellow layer over the surface of the potato. It produces a strong fæcal or urinous odor.

Flügge's or Deneke's comma-shaped bacillus was found in a piece of old cheese. It resembles the cholera-bacillus more nearly than does Finkler's, but it is easily distinguishable from it. Seen in the unstained condition, it is smaller than the cholera-bacillus, and the spirillar forms are more frequent, but they are not so long as those in cholera, and also the individual bacilli forming the spirilla are attached rather at an angle than in a regular curve. It grows rapidly in the nutrient jelly, and its young colonies are very dark, round, and of regular contour. They are irregularly granular. Liquefaction occurs much more rapidly than in the cholera-bacillus, but not so rapidly as in the case of Finkler's. A colony of Flügge's bacillus, twenty-four hours old, is very like a colony of the cholera-bacillus three or four days old. In test-tube cultivations, liquefaction occurs much more rapidly with Flugge's than with the cholera-bacillus; and here, again, a cultivation two days old is very like a cultivation of the cholera-bacillus a week old; but the fluid is somewhat turbid, and the liquefaction at the lower part of the needle-track is more extensive than with the cholera-bacillus. It does not grow at all on potatoes. It will be evident that, taking all these characters together, it is easy to distinguish these organisms from one another. It is not so easy to describe their differences as to distinguish the variety in practice. When mixed together in the same glass-plate cultivation, one can pick out the three kinds with the greatest ease. There are also other comma-shaped bacilli, but they do not qualify gelatin. Indeed, several of them will not grow in the material used for cultivating the cholera-bacillus. Of these, I may mention three.

In Dr. Koch's report on cholera, he mentions that he found in water, in the neighborhood of Calcutta, a comma-shaped bacillus, which, however, differed in important particulars from the bacillus of cholera. It may be best if I simply quote Dr. Koch's statement. "Only once did I find in the water which, at the time of the floods, overflowed the region of the salt-water lake lying eastward from Calcutta, a form of bacteria which at the first glance had a certain likeness to the cholera-bacilli; but, by accurate examination, they appeared somewhat larger and thicker, and their cultivation did not liquefy the gelatin."

Last summer, I had the opportunity of investi-

gating the dejecta of two cases of severe cholera nostras, one of them fatal. In both were comma-shaped bacilli, closely resembling, in microscopic appearance, Koch's cholera-bacilli; and, in the second case, there were also large numbers of spirilla as well. As I was very anxious at that time to get cultivations of the cholera-bacillus, and as it was also possible that these cases might be the first in an epidemic of Asiatic cholera, I spared no pains in my attempt to cultivate these organisms; but, although I made a large number of cultivations, I was quite unable to cultivate them, the same material and the same methods being employed which were afterwards perfectly successful in the cases of true Asiatic cholera. There can, therefore, be no question but that these organisms belonged to a separate species or variety, whatever the proper term may be.

In saliva, more especially, however, in the accumulations on the teeth, comma-shaped bacilli are frequently present—sometimes, indeed, in considerable numbers; and as here, if anywhere, the cholera-bacilli ought to be found, if they be only accidentally present in case of Asiatic cholera, a great deal of attention has been paid to these organisms by various observers. Dr. Koch, himself, in his earliest reports, states that he has paid particular attention to this matter, and that he has entirely failed to find the cholera-bacili in the saliva, or in the accumulations on the teeth. I have, during the course of the past winter, tested my own saliva, and that of other persons, on a number of occasions, for cholera-bacilli, but have entirely failed to find any. The experiments were performed in the same way as in the case of the cholera-evacuations, by glass plate cultivations in the nutrient jelly; and I have done, on an average, one set of experiments (from six to ten plates) every week since the beginning of December. Not only have I failed to obtain cholera-bacilli, but I have entirely failed to grow the comma-shaped bacilli seen in the saliva. In several cases, there were numerous comma-shaped bacilli present in the material tested; but I, nevertheless, failed to obtain cultivations of them. As regards the material employed for cultivation, I have in most instances used the same nutrient jelly as was being at the same time used successfully for the cultivation of the cholera bacillus. This material was as nearly neutral as possible, though generally, no doubt, it was faintly alkaline; in some cases it was faintly acid; and in several in instances it was not neutralised at all, and was therefore strongly acid. Learning lately that it was supposed that the salivary comma-shaped bacilli could be cultivated in absolutely neutral jelly containing five per cent. gelatin, I have prepared some material absolutely neutralized by the use of calcium-carbonate, as suggested to me by Professor Warden; but I have entirely failed to obtain cultivations of the comma-shaped bacili, although considerable numbers were seen on microscopic examination. From my own experiments, therefore, I have no doubt that the comma-shaped bacilli seen in the saliva are not the same organisms as the cholera-bacilli described by Koch. The same failure to cultivate the comma-shaped bacilli of the saliva has attended attempts made by a large number of observers; indeed, with the single exception of Dr. Klein, no one has succeeded in growing them.

Professor Miller, a dental surgeon in Berlin, has made cultivations from a very large number of patients, and has entirely failed to obtain the cholera-bacillus. Indeed, in only one case, from a carious tooth, did he succeed in obtaining a cultivation of comma-shaped bacilli which liquefied gelatin; but, on further investigation, it turns out that this organism is very closely allied to, and in all probability identical with Finkler's bacillus. It seems to me that we have now sufficient evidence to enable us to say definitely that the cholera-bacilli are not present in saliva; more than sufficient evidence, if we bear in mind the fact that they are always present in Asiatic cholera; and that, therefore, if they come from the saliva, and are not peculiar to cholera, they ought to be always, or at least very frequently, found in it.

I have also, in several instances, tested the evacuations from diarrhœa by cultivation for the cholera-bacillus, with entirely negative results. I have referred before to the case of diarrhœa in Paris, in which I also obtained a negative result. Then I have tested putrefying and other liquids containing various kinds of bacteria, without obtaining any eholera-bacilli. And, further, I may bring forward my previous experience with these methods of research, extending now over several years, in which I have investigated water, air, soil, in fact all sorts of materials, in the first instance for practice, and later, with the object of making myself acquainted with the various forms of bacteria, or for other purposes; the result of this experience being that I never met with these organisms till I investigated cases of Asiatic cholera. The answer which I then give is, that I have never met with the cholera-bacillus, except in Asiatic cholera, and that the other comma-shaped bacilli as yet described, differ markedly from it in many essential points. This statement is founded on a thorough examination of a large quantity of material.

I now pass on to the third point; namely, the result of injection of these organisms, or their products, into animals. Numerous attempts have at various times been made to infect the lower animals with cholera-dejecta, but the results have been quite indefinite; in fact, the natural conclusion from them is that the lower animals are not susceptible to the virus of cholera. Cholera-dejecta have been injected into the stomach, small intestines, and veins of various animals without producing any effect. Mice seem to have been the only animals in which anything like positive results were obtained: but it is apparently now very doubtful whether they were really affected with the virus of cholera, or only with some form of septicæmia. Seeing then that the virus of cholera, supposing it to exist in the dejecta, is without effect on the lower animals when mixed with the dejecta, it could not be expected that if it were isolated from the other materials, it would be more potent. Hence a failure to produce disease with any given bacterium which, for other reasons, might be

regarded as causally connected with the disease, does not in any way prove that the said bacterium is not the virus sought for. As regards Koch's cholera-bacillus, the earlier results of injection into the small intestine, or into the veins, or of feeding the animals with pure cultivations, were also entirely negative. Thus the question remained *in statu quo*, and all that could be said was, that this failure did not demonstrate that these bacilli were not the cause of cholera, but if anything rather strengthened the contrary opinion, as showing that in this particular the relation of this organism to the lower animals was the same as that of the virus of cholera. The matter has not, however, been allowed to remain in this condition; numerous efforts have been made to overcome, in some way or other, the difficulty of infecting animals with cholera, and to some extent these efforts have been successful.

During an investigation on cholera, Nicati and Rietsch, being struck by the fact that the biliary secretion seemed to be diminished or arrested during an attack of cholera, thought that this might have something to do with the rapid growth of the cholera-bacilli in the intestine. They therefore tied the bile-duct in dogs, and then injected pure cultivations of cholera-bacilli into the intestine. They report that their experiments were successful in several instances, the animals suffering from diarrhœa, and dying in two or three days. The intestine after death was found to be reddened, and to contain fluid watery dejecta, resembling the rice-water material in man. They were also able to produce similar effects in guinea-pigs. Shortly afterwards, Dr. Koch reported that he had been able, in some instances, to obtain like results in guinea-pigs. Apparently, however, the results were by no means constant.

When I returned from Paris, I wrote to Dr. Koch to enquire what his method of operating was, and he kindly gave me full details. The essential point was to inject the cultivation into the duodenum between the pyloric end of the stomach and the entrance of the bile-duct, the whole operation being done with thorough antiseptic precautions. These precautions consist in shaving the skin of the abdomen, washing it thoroughly with watery solution of corrosive sublimate (1 in 1000), and with carbolic acid; the hands, sponges, knives, and other instruments are also thoroughly disinfected, and the wound is dressed with an antiseptic dressing. I have always, after stitching up the wound closely with silver wire and catgut, applied powdered salicylic acid in large quantity, so as to form an antiseptic crust.

The operation is by no means a difficult one, and guinea-pigs—which are the only animals I have used for these experiments—take chloroform very well. A small incision about half an inch to the right of the middle line, extending from the lower border of the ribs downwards, exposes the lower edge of the liver and the stomach close to the pyloric end. By pulling gently on the stomach, the pyloric end and the first part of the duodenum come into view. The syringe employed was that introduced by Dr. Koch for experiments with bacteria, remarkable chiefly for the fact that the metal portions screw on to the glass and that the washers and a portion of the piston are renewed every time the syringe is used. The syringe is always sterilised by keeping it in an iron box at 300° Fahr. for three hours after the fresh washers and piston have been applied. In injecting into the intestine, the needle is pushed through the walls as obliquely as possible, so as to prevent regurgitation into the peritoneal cavity. As a rule, cultivations in nutrient jelly were employed. A little distilled water was boiled, and allowed to cool under protection from dust. A small quantity of the growth was then removed from the tube by means of the sterilised platinum wire, and diffused in the water.

MEDICINE.

Euphorbia Pilulifera in Asthma. — Marcet commends the active principle of this plant in the treatment of asthma. Its action is purely antispasmodic, so that it is useless in bronchitis. The dose is one grain, best given in a watery solution. The author has never found it necessary to give more than a grain and two-thirds to produce the therapeutical effect. Dujardin-Beaumetz employs the tincture, the dose of which varies from ten to twenty drops. A syrup also is recommended, each teaspoonful of which contains a grain of the drug.—*N. Y. Med. Jour.*, May 23, 1885.

Capsicum Treatment of Anal Fissures.—In a recent thesis Dr. Panzat has recorded a number of cases of fissure of the anus treated by the internal administration of capsicum. It was given in doses of gr. iij morning and night. In most of the cases a cure resulted within a comparatively short time. The cases recorded were too few in number to serve as a basis for any definite conclusions; but the remedy being so simple and the effects in certain cases so beneficial, the author concludes that a trial of it should always be made, and if at the end of a few days no improvement occurs, recourse may be had to forcible dilatation.—*Medical Record*, June 20, 1885.

SURGERY.

Lactic Acid as a Means of Destroying Pathogenic Tissues.—As the result of researches made on this subject, Mosetig-Moorhof (*Centralblatt für Chirurgie*) concludes that this acid is endowed with the property of destroying pathogenic tissues without impairing the healthy tissues. These observations have been verified in fungous growths, in lupus vulgaris, in superficial epithelioma, etc. The morbid tissue was dissolved into a pulp by the acid, while the surrounding tissue and the islets of healthy tissue within the neoplastic zone remained intact. The mode of application was as follows: By means of plaster or beeswax the surrounding healthy tissue was protected; a piece of linen or of absorbent cotton-wool the size of the affected area was soaked in a concentrated solution of lactic acid, and kept in its place by a layer of cotton-wool and a bandage. He has also employed a paste made of lactic and salicylic acids. The dressing was left on for twelve

hours, when it was removed and the surface carefully cleansed. For the next twenty-four or forty-eight hours it was dressed with water, after which the acid was again applied. This process required to be repeated six or seven times, leaving an interval of a day or two before the neoplasm was destroyed. No pain was occasioned by it, and children bore it as well as adults.—*Edinburgh Medical Journal*, May, 1885.

OBSTETRICS AND GYNÆCOLOGY.

UTERINE HÆMATOCELE.—DR. G. BERNUTZ, physician to the Charité Hospital, of Paris, has concluded a lengthy paper on this subject in the *Archives de Tocologie*. His last article appears in the number for May, 1885, in which he arrives at the following conclusions:

1. Uterine, or peri-uterine hæmatocele, cannot be considered from a pathological point of view as a special disease; it constitutes simply an anatomico-pathological entity, which may give rise to a great number of diseases or diverse morbid conditions. It is consequently indispensable that the subject be exactly defined, to avoid its being too complex or having its pathological history confused.

2. The denomination of uterine, or peri-uterine, hæmatocele, should therefore be exclusively applied to sanguineous pelvic tumors contiguous to the uterus, and not really uterine, which have as their seat the peritoneal cavity itself; this excludes, 1st, what is called extra or sub-peritoneal hæmatocele, a thrombus of the cellular tissue of the broad ligaments and of the vagina as observed in the puerperal state; 2d, the pseudo-hæmatocele of pelvic hæmaturæ, in which the hæmatic extravasation is not contained in the peritoneum, but lies either in an extra-uterine abdominal fœtal cyst, or is intra-neo-membranous.

3. The name uterinehæmatocele should not be applied except to sanguineous intra-peritoneal collections which form tumors, and tumors that are perceptible to abdominal palpation and to the touch, that is to say, which are encysted. It cannot be applied legitimately to collections of blood that are free, floating in the serous membrane, changing position under pressure of the hand, and not giving the characteristic resistance of all tumors. This latter class should be defined as internal abdominal hæmorrhage.

4. Therefore a uterine hæmatocele requires two factors for its existence: An intra-peritoneal pelvic hæmorrhage, and the septum of the pelvic excavation; one may be the cause of the other, or they may occur at different periods. The hæmorrhage which engenders the hæmatoma may arise trom this pelvic septum, or it may follow immediately upon a sub-acute pelvic peritonitis.

5. The mode which has for years been considered as the only one, is where the hæmatocele has as its initial factor an intra-peritoneal pelvic hæmorrhage, which creates secondarily an encysted peritonitis. In these cases, where the pelvic cavity and the abdominal cavity proper are in free communication, and where, consequently, the vascular tension, not being confined by the walls of the cavity, is prone to distension, the sanguineous extravasation, by its abundance, causes cataclysmic symptoms, such as characterize internal abdominal hæmorrhage; and terminates fatally, either by the excess of blood discharged, by the development of a generalized peritonitis, or by the manifestation of serious functional disturbances caused by compression.

6. In a second mode of formation, there preëxists, on the contrary, a septum of the pelvic basin, which constitutes after a time a closed cavity, whence it results that the sanguineous extravasation can accumulate but in moderate proportions, causing a comparatively benign symptomatology. The hæmorrhage which gives rise to the hæmatoma in this form may be from a lesion of the ovary (ovarian hæmatocele), a congenital or acquired atresia, complete or incomplete (hæmatocele by menstrual retention) an exaggeration of the secretion of blood from the internal genital organs (metrorrhagic hæmatocele), or an active neo-membranous congestion (hæmatocele symptomatic of a pachy-pelvic hæmorrhagic congestion) occurring suddenly, most frequently at a menstrual epoch or after a menstrual disturbance, with women in apparent good health, or affected with a hæmorrhagic diathesis, and the hæmatocele is established. In this variety there exists a special anatomical disposition, which is characteristic and consists in a repletion, associated with the pelvic intra-peritoneal hæmatocele, of one or both of the oviducts with blood.

7. In the third mode of formation in which most frequently there pre-exists a septum of the pelvic basin that is of some age, and may be incomplete, the hæmorrhage which produces the hæmatocele occurs in the course or decline of a sub-acute pelvic peritonitis, which constitutes a phase antecedent to the hæmorrhage, by favoring the multiplication of new vessels in the serous membrane. This occurs, generally, at a catamenial period, as a recrudescence of the inflammation of the pelvic serous membrane; it becomes at once of considerable volume, and immediately perceptible, and gives ultimately the progress and termination of an ordinary hæmatocele. This is the most common form of all.

9. Dr. Bernutz combats the well-known theory of Virchow upon the mode of formation of hæmatoceles, as being inexact and not sustained by his study of the subject. The very exceptional cases which respond to that theory, constitute an affection absolutely distinct from uterine hæmatocele, with which these intra-neo-membranous hæmatomata have but very remote relations, because there is, 1, as an initial factor a special chronic inflammation, hæmorrhagiparous, of the pelvic serous membrane, which is most frequently located on the posterior wall of the uterus; 2d, a slow, chronic and intermittent mode of formation; 3d, a baffling symptomatology, at present indefinite; 4th, as an anatomical characteristic, a special constitution, identical with that of the meningeal hæmatomata, which are symptomatic of pachymeningitis, which is entirely different from the anatomical constitution observed in uterine hæmatocele properly so-called, in which the extravasation has for its seat the peritoneal cavity itself incrusted with false membranes.

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THE CLIMATIC TREATMENT OF PULMONARY PHTHISIS.

The appearance of an English translation of Prof. Jaccoud's work on "The Curability and Treatment of Pulmonary Phthisis," is one of the most important medical events of the year. The author's reputation in this field is so great that his opinions necessarily command the highest respect, both in Europe and this country; and his views are so clearly set forth that it is impossible to mistake his meaning. It is interesting to note at the outset, however, that while asserting that phthisis can be cured, the author by no means holds that he has found a specific for the disease, nor that every case is susceptible of cure. The book was written to show that under certain conditions the affection is curable.

In the opening chapter it is asserted that the most important question in the treatment of the disease is that of climatic stations in winter and summer. This conclusion has been arrived at after the most careful investigation of so-called health resorts; for it is probable that on this subject Jaccoud is the highest living authority, he having visited all such places in Europe, many of those in Asia, the principal stations in Algiers and Morocco, and the Canary and Maderia Islands. The estimation in which he holds the climatic treatment is shown by the fact that more than one hundred pages of his book are devoted to this subject. His studies have led him to fix upon new principles the general indications for warm climates, as well as the particular indications of the different climatic groups. In his remarks on this subject he regrets, what was pointed out in our columns a short time ago, that physicians are so much guided by routine in selecting climates for the subjects of phthisis. It is often the case that a case of confirmed phthisis, another of the early stage, and a third which has not yet developed the disease, but in which it is feared, are sent to the same places. It should be remembered that no climate has any curative effect upon tubercle; that some climates seem to confer a kind of immunity from the disease; and that of the different elements constituting climate, that which is most directly connected with this immunity is the altitude of the place.

While it should not be inferred from the foregoing facts that climates at a high altitude have a curative effect upon tuberculosis, it is quite certain that these climates in some way prevent the development of the disease in their inhabitants, and that, unless there are some special counter-indications, they offer the most favorable atmospheric conditions to those already affected. It is not difficult to see that climates at high altitudes, and having but slight atmospheric pressure, should be especially beneficial in many cases. At an altitude of from 3,900 to 6,500 feet, with slight atmospheric pressure, "the circulation is so modified that the blood collects in the superficial parts, the capillaries of the skin being turgescent." This flow of blood to the periphery tends to keep the viscera in a state of comparative anæmia, which can scarcely be otherwise than beneficial. "The cerebro-spinal functions are carried on more actively and with greater facility, the mind is unoccupied and clear, the power of locomotion is increased, the respiration is much facilitated, though the mode of performing it is greatly changed." There is, therefore, with a feeling of activity, an increased capacity for physical exertion with an increased desire for exercise, the final result of which must be an improvement in general nutrition, and more or less restoration of the organic powers.

The relative anæmia of the lungs, as of the other viscera, produced by altitude, increases the good influence of respiratory activity by facilitating the pulmonary circulation; thus removing any existing congestion, and preventing hyperæmia. Hence, it is easily seen that the idea that attributes a tendency to hæmoptysis to residence at a high altitude, is grounded on error; as shown by the facts that patients residing there are almost universally free from hæmoptysis, and by the cessation of hæmoptysis on the arrival of a patient at such a place. It is an interesting fact, that effects are produced by the rarefied air of high altitudes which are very similar to those produced by compressed air; in the first the increased muscular exertion causes complete respiratory absorption,

while in the second the increased "inspiratory absorption" results from the passive yielding of the lungs, and only the lungs, to the increased pressure. "Mountainous climates at the height of from 4900 to 6200 feet, have in reality a double effect; firstly, a general one, by which the constitution is restored to a healthy condition; secondly a local one, by which the activity of respiration is increased to a maximum degree, while the lung is protected from the effects of congestion or hyperæmia. Climates which, on account of their more northern latitude, present analogous conditions of temperature at a lower altitude. produce the same tonic effect under these conditions. They have not, however, the same mechanical influence upon the lungs, this being entirely due to the barometric pressure." And it is in connection with this distinction that Jaccoud proposes a new and special division of climates, as considered with regard to the treatment of phthisis, into, climates which are highly situated with but slight atmospheric pressure; and climates of the plain with moderate, or somewhat less than moderate, atmospheric pressure. Types of the first group are altitudes of from 4900 to 6250 feet, though he admits that mountain residences should be placed in this group at so low an elevation as 3300 feet in the latitude of France, or even so low as 1650 feet farther north. The second group includes places with an altitude of less than 1300 feet.

Climates embraced under the first division, may be said to be "unreservedly adapted to the prophylactic and initial period of ordinary phthisis. . . the climates with moderate pressure fulfill none of the etiological indications drawn from the nature of the disease. Climates with moderate pressure, are wanting in the mechanical action of a rarefied atmosphere; there is insufficient tonic and fortifying effect, nor do they possess that special purifying effect peculiar to high altitudes; they therefore fulfill only secondary indications; secondary either in themselves, or on account of the time at which they appear. While such climates have no curative effect on the disease, and are not preventive of fresh tubercle, they may, on account of having a temperate or warm fresh temperature in winter, act favorably upon any pre-existing bronchitis or pulmonary catarrh. Confinement within doors is unnecessary, and much of the time may be spent in the open air without danger of provoking bronchitis or pneumonia; which would not be the case in a more rigorous climate, or one having greater variability of temperature. It is thus seen that climates of the second class, while of undoubted value in the treatment of phthisis, are only of secondary importance. A change, therefore, from a highly situated residence to a low station, should not be made until positively indicated by the condition of the patient.

What, then, are the indications and contra-indications for a high altitude in the treatment of phthisis? It need scarcely be said that these cannot be defined by hard and fast lines, the indications being of a purely individual character. Certain general rules, however, may be deduced: "Catarrh of the apices occurring at the onset of the disease, and which accompanies or often precedes the first formation of the tuberculosis," is not a counter-indication for residence at a high altitude, but is a special indication for such residence so long as other circumstances of the patient give the same indications. The same is true of the later catarrh denoting tubercular softening, or, according to Laennec's division, the passage from the first to the second period of the disease. In these cases there is one special contra-indication to a high altitude; when the patient does not live at a high altitude, "and an opinion has to be formed at the beginning or during the course of the winter," as to the advisability of going to such a place. "It is to be feared that one of the first effects of this unseasonable change would be the occurrence of bronchitis and the increase of preëxisting catarrh," and the patient should not be sent to such a place. When this question arises in summer, however, the case is quite different, and the physician should "merely impose the necessity of a very gradual transition from the valley to an elevated place." The high climate will be of special benefit, but must be attained slowly, and when the winter comes on the patient will have become so "inured to the atmosphere," that the beneficial effects of the climate will be obtained without the previous liability to pulmonary complications. It should be remembered, however, that in this consideration of "high climates," the so-called "winter stations" are not referred to.

In the prophylactic climatic treatment, the only contra-indications are certain pathological conditions, such as general emphysema, cardiac or vascular disease, etc., which have no connection with the malady in question. In the ordinary form of tuberculosis, the question of high climate is to be decided chiefly "by the mode in which reaction occurs. Whatever the stage of the affection, the course of the symptoms, and the lesions may be, high climates must on no account be taken into consideration should the patient be of an excitable nature. Another counter-indication, quite as absolute and easily

understood, is what may be called the wasting period of the disease." The consumptive stage should not be confounded, however, with that of fever. "Of whatever type it may be, fever is an element in the consumptive phase of the disease, of which it is plainly characteristic;" and is a contra-indication to high climate, unless it subsides under the influence of antipyretics, in which case it may be very beneficial, provided it be resorted to in summer. If antipyretics have no effect upon it, high climates are positively contra-indicated. "Ulceration of the larynx in tuberculosis should unreservedly exclude the use of climates with slight atmospheric pressure" (high climates). The same is true of intestinal ulceration, while the diarrhœa which is simply due to intestinal catarrh or gastro-intestinal dyspepsia, is markedly benefited by high climates.

Another contra-indication to high climates is the involvement of a large portion of the lung, or considerable bilateral lesions. In such cases hæmatosis would not be sufficient in the rarefied atmosphere, and persistent dyspnœa would result. "If the other circumstances and particulars of the case positively indicate a high climate, the lowest altitude in the group should be alone inhabited for many months. . . . . If the trial succeeds, the lesions will perhaps become less extensive during this time, so that eventually the patient may be able to reside in climates of higher altitude." In case of the existence of caverns, everything depends upon their number and size, or "upon the extent to which the surface is diminished in which hæmatosis takes place." Cavities of small size, stationary, containing unirritating liquid, and unassociated with inflammatory complication in the adjacent parts, are benefited by the rarefied atmosphere, and may be brought to occlusion and cicatrization. High climates are also contra-indicated by the so-called pneumonic foci (or the lesions which remain when the original disease has disappeared), when they are accompanied by acute symptoms recurring at short intervals. As regards hæmoptysis, it may be stated as a general rule that that occurring in the first or second stage of phthisis will disappear under the influence of high climate; but this symptom in itself furnishes no indication for climatic treatment. Finally, it should be said that in the case of patients who habitually reside at high altitudes, and have "become consumptive from living in the plain," these contra-indications are not to be regarded. "In these circumstances, a return to a high climate is absolutely necessary, and should outweigh all other considerations."

TRANSPLANTATION OF AN EYE FROM THE RABBIT TO MAN.

At the meeting of the Académie de Médecine, of Paris, on May 28, M. CHIBRET reported that on May 4, 1885, he had successfully transplanted an eye from a rabbit to a young girl who had lost her left eye. The report contained in the *Bulletin de l'Académie de Médecine* does not say whether "successfully transplanted" means that the girl can see with the rabbit's eye or not; though one would infer that she can. It seems scarcely necessary to say, however, that such a result could not be hoped for, and that the operation must have been performed for cosmetic purposes only. Even in this case, the result should have stated whether or not the transplanted eye became controllable by the patient, and whether, if controllable, the movements are in accord with those of the other eye. If not, a glass eye would serve a better purpose. The report is characterized by that lack of detailed information which is too common in the published proceedings of the Paris Academy of Medicine.

It would be still further interesting to know if the transplanted eye will grow in consonance with the other. We hope that the subsequent history of this very interesting case will be more fully reported.

INTERNATIONAL MEDICAL CONGRESS COMMITTEE.

As this number of the JOURNAL goes to press, the General Committee on the Organization of the Ninth International Medical Congress, as reorganized by the American Medical Association, are in session in this city. The question about two committees has been settled, and the original committee of eight and the new members appointed for its enlargement are acting together as one committee, and we trust with a fair prospect of satisfactory results.

CLOSE OF THE VOLUME.

The present number closes the fourth volume and the second year of the publication of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. It contains the title page and full *index* for the volume.

We take this occasion, as at the close of previous volumes, to request all our readers to examine their files at once, and if there are any numbers of the present volume missing, send us a postal card stating plainly the *number* and *volume* they need, and we will cheerfully supply it, as it is much easier to do it now, before the surplus numbers are tied up and stored, than it will be at any later period.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, June 4, 1885.

(*Concluded from page 694.*)

DR. E. P. BERNARDY reported a case of

GESTATION IN A SARCOMATOUS UTERUS SIMULATING EXTRA-UTERINE PREGNANCY.

Mrs. M., delicate, age about 30, married six months, was first seen on October 3, 1884, She was said to be suffering from a cold. I found the patient up. Temp. 105°, pulse 130, with a high fever and a severe cough. Examination of the lungs revealed double pneumonia. At the same time noticing the abdomen prominent, I inquired, and was informed that pregnancy was five months advanced. The abdomen was rather large for that period. On Sunday, Oct. 5, she complained of a sharp pain in the right inguinal region; the pain was excruciating and demanded the administration of large doses of morphia before any relief was obtained. I found the right inguinal region filled by an immense growth, reaching almost to the lower border of the liver. The uterus, or what appeared to be the uterus, was enlarged and pushed well toward the left side. On vaginal examination, found the right side of the pelvis filled by a growth. I first thought I detected fluctuation, but closer examination showed it to be hard to the touch. The uterus was jammed well toward the left and was immovable, the neck somewhat absorbed, the os tilted up behind the pubes. To reach it the finger had to be passed well upward; it was closed and soft. The patient had never had any uterine trouble, menses always came without pain; they never appeared after her marriage, which occurred one week after a period. Her health remained good for three months after marriage, when, while out walking, she was suddenly seized with a sharp lacerating pain in the right side of the abdomen. The pain was so great that she almost fainted, but being a woman of strong will, she finally, after suffering terrible agony, reached home and went to bed. No physician was called in. Next day there were slight traces of blood on her night dress. Under absolute rest the pain subsided, and at the end of a week she was about her household duties. The pain in the side returned if she exerted herself. Sexual intercourse was painful and was followed by traces of blood the next day. Believing that the symptoms pointed to either extra-uterine pregnancy or a tumor complicating pregnancy, I asked Dr. Goodell to meet me. By the time the consultation was held, October 8, a severe attack of peritonitis had commenced. This complicated matters, as a close examination was impossible. On account of the distended and painful condition of the abdomen it was impossible to trace any outline of the growth or uterus. It was decided that the symptoms and history pointed to extra-uterine pregnancy, but that, undoubtedly, the uterus contained something, whether a tumor or child, in the present condition of the patient, it was impossible to decide: the leaning was toward a pregnant uterus. By Oct. 16, the peritonitis was under control, the lungs no better. Oct. 19 I was sent for, the messenger stating that there was a renewal of the peritonitis. I found the patient in active labor, the fœtus descending rapidly. In half an hour labor was completed. I readily detected the large growth filling the upper portion of the right side of the pelvis, and the uterus was surrounded by a large growth. The cervix was hard. From this time the lungs improved, but she remained extremely weak and there was a constant dribbling of blood from the vagina. November 3, the growth was still present and the cervix hard, and I began to think of malignant disease in connection with the tumor. I had applied, night and morning, to the abdomen, unguent. hydrarg., belladonna and iodine, equal parts; this remedy had the effect of causing the absorption of the large growth, but the mass surrounding the uterus remained the same. November 27 vomiting occurred and was arrested with difficulty; a bloody discharge from the vagina and a constant sore feeling over the region of the uterus, which was still toward the left side. The patient's condition was not good, she was extremely weak; the slightest exertion would exhaust her and bring on bleeding from the uterus. December 26 I found her suffering from pleurisy, the left pleural cavity full of fluid. January 1, abdominal dropsy had set in. A consultation with Dr. Goodell was held. A positive diagnosis of malignant disease was made. *Prognosis.* Death at any moment. She died suddenly the same evening while talking to her husband. *Post-mortem* examination by Dr. E. A. Roussel, twenty-four hours after death. Patient greatly emaciated. *Thorax.* A large amount of effusion completely filling up the left pleural cavity, while the cavity of the right side was partially filled; both lungs were compressed upwards. No adhesions. On section the lungs appeared mottled, and were hepatized in general appearance, but were otherwise healthy. *Heart.* On opening the pericardium, found a moderate amount of serous fluid vegetations on mitral valve; weight, 11 ozs. *Abdomen.* Entire cavity was greatly distended with a dark fluid full of broken down lymph. The intestines were forced upwards; there were slight evidences of beginning peritonitis. A portion of the ileum on the right side presented a black, unhealthy appearance, bordering on gangrene. The uterus was increased in size. The outer surface presented an irregular mottled appearance, large veins covered its surface; at the fundus there appeared a spot about one inch in diameter of a bluish tinge, on pressure by the finger the surface readily broke, underneath was a cavity about the size of a large hickory-nut, it did not communicate with the interior of the uterus. On opening the uterus, its cavity was found to be almost obliterated, the tumor seemed to have entirely absorbed the true uterine tissue, with exception of the neck. In the body of the tumor were observed small masses or growths, varying in size up to that of an egg. The ovaries were small, and seemed to have participated in the general disease. Microscopic ex-

amination proved the tumor to be of the adeno-sarcoma variety.

At first I was convinced that I had a case of extra-uterine pregnancy; but the peculiar hardness of the tumor made me doubtful. Here was a patient who had never had any uterine ailment, marries, becomes pregnant; at the end of the third month, without any premonition, while quietly walking, is seized with pain of an excruciating nature in the right side, goes to bed and remains quiet, the next day blood flows from the vagina. She remains comparatively well for two and a half months more, when she is again suddenly seized with pain in the same side, followed by peritonitis. A tumor is found in the affected side, the uterus is enlarged, but not sufficiently so for a five and a half months pregnancy, the os giving no signs of that softening which should accompany pregnancy. Could we have a group of symptoms more allied to those of extra-uterine pregnancy?

Dr. J. M. Keating made some remarks on

INFANT FEEDING.

He said: At my request, Dr. Charles Potts has instituted a series of experiments which have a decided practical value, and we hope to present them to this Society at an early date, but I desire to place on record a statement of the results so far reached, which appear to be interesting and important. The question often arises: Is it of advantage or not for an infant to be partly nursed and partly bottle fed? What action has milk upon starch, if any? To answer this the following tests were made: 1. Sample of milk composed of the milk of several women. A quantitative estimation of the sugar in it by Fehling's method showed 6.84 per cent.; 10 c.c. of this milk was then taken and ½ gramme of powdered starch added, allowed to stand at a temperature of 99° for 30 minutes, after which 5 c.c. diluted with 45 c.c. of distilled water was tested, and showed 8.62 per cent. of sugar. The other 5 c.c., after standing 60 minutes, gave 9.09 per cent. 2. Another sample found to contain 7.14 per cent. of sugar had a ½ gramme of powdered starch as in No. 1. In 30 minutes it gave 9.803 per cent. of sugar in 5 c.c. The other 5 c.c., after remaining 60 minutes, gave 8.62 per cent. Possibly part of the sugar deposited and was drawn off with the first 5 c.c. 3. Another sample showed 6.32 per cent. of sugar, and after adding the starch as before, gave in the first 5 c.c. 8.19 per cent., the next 5 c.c. 7.93 per cent. These investigations showing that the women's milk gave an increase of sugar after digesting with starch.

Exp. 4. A sample of cow's milk was tested, and found to contain 3.87 per cent. of sugar, to this was added a ½ gramme of starch to 10 c.c. At the end of 30 minutes 5 c.c, diluted with 45 c.c. of distilled water showed no increase of sugar. 5. A sample of cow's milk gave 4 per cent. of sugar, and was treated as before, but at the end of 30 minutes, and then 60 minutes, it gave the same result. 6. Another sample of cow's milk gave 3.703 per cent. of sugar; was treated as before with same amount of starch. In 30 minutes 5 c.c. gave same result; in 60 minutes 5 c.c. gave same result. These investigations showing that cow's milk gave no increase of sugar after adding starch. Does the acidity of cow's milk prevent the sugar change? Does the sugar-change continue in an acid medium? 7. Took another sample of human milk—from one woman. It yielded 6.25 per cent. of sugar. Added starch as before. In 30 minutes 5 c.c. gave 7.6 per cent. Took 10 c.c. of this milk (6.25 per cent. sugar), and added a few drops of C. P. dilute hydrochloric acid, enough to faintly acidulate it, and then added ½ gramme of starch and let it stand as before. In 30 minutes 5 c.c. gave 6.41 per cent., and in 60 minutes 5 c.c. gave 7.35 per cent. of sugar. 8. Another sample of woman's milk without starch gave 6.17 per cent., with starch 7.24 per cent., 10 c.c. of the same, acidulated with hydrochloric acid, C. P., diluted, gave in 30 minutes 7.55 per cent. In these tests 10 c.c. of Fehling's solution was used with 40 c.c. of distilled water.

If future investigations prove the correctness of these statements, we may safely assert that the nursing woman may supplement her breast milk with some well prepared, digestible form of food containing a small quantity of starch advantageously, and also that the amylolytic ferment will remain active in the slightly acid stomach of the infant.

CHICAGO MEDICAL SOCIETY.

Stated Meeting June 15, 1885.

The President, C. T. Parkes, M. D., in the chair.

Dr. R. G. Bogue reported

A SUCCESSFUL CASE OF NEPHRECTOMY.

The patient was a woman, aged 36, single, who had suffered from several attacks of acute rheumatism with cardiac complications. About six years ago, while doing laundry work she severely strained her back, and this was followed by frequent and painful urination, the urine containing pus, blood and mucus. The pain in the back increased during menstruation. These symptoms continued until 1882, when a swelling, accompanied by pain and soreness, appeared in the right lumbar region. This swelling was finally opened and gave exit to a large quantity of pus, and remaining open continued to discharge pus until the time of the operation, pus, blood and mucus at the same time appearing in the urine, which was voided with difficulty. At one time there was so much clotted blood in the bladder it was only dislodged by breaking up the clot with a catheter and washing out the bladder. Later there was nearly a closure of the opening into the lumbar abscess, and a fluctuating tumor appeared near the old one, which was opened and gave exit to a quantity of fœtid pus. From May 13 to August 27, 1884, there was a free discharge of pus through the lumbar openings and the bladder. At no time was there a urinous odor to the discharge from the loin. Whenever the discharge from the loin was greater pus appeared in less quantity in the urine, and vice versa.

Believing that there was an abscess of the right kidney, on August 27, 1884, Dr. Bogue made an exploratory operation by making an opening into the loin along the course of and just below the twelfth

rib, including in its track the sinus. He came upon a dark fluctuating mass, which upon puncture discharged a quantity of pus, and upon further examination was found to be the capsule of the kidney, divided into compartments, and distended with pus. The sac was adherent to the surrounding tissues, and upon separation bled freely. The adhesions were quickly broken up and a stout ligature placed around the attachment or peduncle, which was the ureter and renal blood vessels. This was done by the aid of a large bent probe armed with silk. This ligature completely arrested the hæmorrhage. Near this ligature the peduncle was transfixed by a double thread of strong silk and tied in two parts, the mass cut away, with ligatures left long and with drainage tube sewed to drain the cavity, which was cleansed with a carbolated solution, and the wound dressed with oiled silk, gauze and oakum. The patient convalesced rapidly with the exception of an attack of rheumatism, and one rather free discharge of blood from the bladder, which followed traction on the ligatures. The ligatures did not separate until Dec. 7. But little pus came with the urine after the operation. There is yet a small fistulous opening in the track of the wound. The patient is now comparatively well. The mass removed was a distended kidney capsule, with calices so distended that there was obliteration of the kidney tissue except at one point, where there was enough to identify the structure.

DR. C. T. PARKES remarked that an interesting point in the report is where it is described how hæmorrhage was arrested, as the greatest danger in this operation is from hæmorrhage. Czerney had a case in which the hæmorrhage was so severe that he ligated the aorta. Operations on the kidney are becoming quite frequent. In an interesting paper Dr. Gross gives his observations of over 200 cases, and limits the cases in which an operation is suitable. Dr. Parkes said that he wished to call the attention of the Society to the fact that there is sometimes an anomalous distribution of the arteries to the kidneys. He had met two cases in which the arteries entered the kidney at the lower end instead of the hilus, and this should be remembered in cases of nephrectomy, and especially nephrolithotomy. Sometimes the renal artery enters the kidney by the two branches.

DR. BOGUE, in answer to several questions by members of the Society, replied that no vertical incision was necessary; that the diagnosis was positive only after the operation, which was an exploratory one; that the ureter and renal blood vessels were ligated in mass; that in a supposed case where there was a well-defined, movable tumor in the abdomen, unaccompanied by pain, pus in the urine with difficult urination, which was relieved by washing out the bladder, if there was a reasonable probability it was a suppurating kidney, he would advise an operation.

THE CONTINUOUS CURVE-FORCEPS.

DR. E. W. SAWYER read an interesting and exhaustive paper on the continued pelvic curve in the obstetric forceps, with remarks on forceps in general. He defined the perfect obstetrical forceps to be an instrument with which it is practically impossible to injure the mother or fœtus when skillfully used. In order that the forceps may be such a harmless extractor, after many years of observation and experience, he had arrived at the following conclusions: *First*, that there should be a space of three and one-fourth inches between the compressing surfaces of the blades, when the inner surface of the handles are in contact. Any less space will fatally compress the fœtal head. The long diameter of the ellipse, bounded by the conjoined grasping curves of the blades, should be five and one-half inches; the distal opening of this ellipse, corresponding to the separation between the tips of the blades, may be three-fourths of an inch, five and one-half inches from the blade tips; the opening should be two and one-half inches. If these measurements are less, severe injury may result to the fœtus. *Second*, in selecting an instrument, a straight-edged ruler should be placed at right angles to the long diameter of the blade, to determine if the outer edge of the blade and the border of the fenestra are on the same plane; if not, such an instrument invariably injures the fœtal scalp. *Third*, the loose mortise-joint lock, allowing a backward and forward motion of the handles, and thus enabling the obstetrician to properly adjust the forceps to the fœtal head, is the only safe, simple and easily operated lock. *Fourth*, in compressing the fœtal head, the closest imitation of nature is safest to follow; hence a moment of compression during a pain should be followed by loosening the grasp of the head, which cannot be done with those instruments which admit of the handles being fixed together. *Fifth*, the length of the handles should be such as to allow the operator to reserve his forces for difficult traction. The rounded space just in front of the lock, admitting of the introduction of a finger, is of special value as a point of traction, when a great degree of compression is not demanded. *Sixth*, the blades of the instrument should be of the best steel, at least one-fourth of an inch square at the shanks and gradually thinned to about three thirty-seconds of an inch at the tips. Slighter material is so yielding as to permit the blades to be pulled off the heads. *Seventh*, if an index be fixed to the fœtal head, as for example the handles of the forceps, in such a manner as to follow the direction given to the head by the unaided efforts of nature, an irregularly curved line would be described forward and upward, which would have its termination, at the moment of the escape of the head, at a point near the umbilicus of the woman. This curved line should be the guiding line to the attendant who attempts to reinforce the expulsive force of the uterus with the forceps. Dr. Sawyer then exhibited a forceps of his own invention, in which the pelvic curve is extended to the ends of the handles, to guide the operator in producing traction in the direction of the curved line above mentioned. He claimed that in those cases where the occiput, or sinciput, presents posterior, and it is decided to deliver in this position, this curve will allow the operator to grasp the head with the forceps well forward over the ears without its slipping over the occipital poles.

In answer to several objections as to the feasibility

of securing a perfect forceps, Dr. Sawyer stated that he did not claim his forceps to be perfect, but that he had copied the best features of other forceps, and thinks he has an instrument which will do less injury to the mother or child than any forceps with which he is acquainted. He believes it to be absolutely safe for the child, and was not intending to speak of the indications for using forceps, or the manner of their use, but endeavored to incorporate in his paper some points about forceps in general which he had never read or heard taught, and hoped they would be useful to all who wished to approximate as nearly as possible the ideal forceps.

DOMESTIC CORRESPONDENCE

RENAL CALCULI.

EDITOR JOURNAL AMERICAN MEDICAL ASSOCIATION:

Sir:—A post mortem examination was made June 5, 1885, on the body of Mrs. C., aged 42 years, by Dr. L. North, who was called to attend the patient during her last illness, which continued about a week. Dr. Conklin and the writer, who had seen Mrs. C. in consultation, were also present at the post mortem examination. A large calculus, weighing 1,230 grs., and a smaller stone, which weighed 87 grs., were found embedded in the right kidney, together with about six ounces of sanious pus. This kidney, with its contents, formed a tumor located about an inch below and two inches to the right of the umbilicus, which could be distinctly mapped out during the life of the patient. Inflammation of the kidney, involving the neighboring structures, had finally extended to the greater omentum, and from thence to the ascending and transverse colon, the latter being the principal feature in producing a fatal termination. There were two ounces of pus in the left kidney, and a calculus which weighed 367 grs., yet fully 25 grs. crumbled away upon removing it, notwithstanding the calculus was very carefully dissected from the kidney. My friend Dr. North analyzed these calculi according to the table of Dr. Bence Jones, and found them composed of oxalate and phosphate of lime—about three-fourths of the former and one-fourth of the latter. J. F. JENKINS, M.D.

Tecumseh, Mich., June 15, 1885.

ASSOCIATION ITEMS.

PRIZES OF HONOR.—At the recent meeting of the American Medical Association, Dr. R. Harvey Reed, of Mansfield, Ohio, offered the following resolution, which was adopted:

Resolved, That a committee of three be appointed by the President, whose duty shall be to devise a system for the awarding of the honors to those who may desire to present papers for prizes of honor in the different sections at the next meeting of this Association; and that said committee report subsequently through the Association JOURNAL.

The President of the Association announces that he has appointed the following members as the committee called for by the foregoing resolution: Dr. R. Harvey Reed, of Mansfield, Ohio; Dr. J. H. Hollister, of Chicago, Ill.; and Dr. J. Morris, of Baltimore, Md.

MISCELLANEOUS.

SANITARY MEASURES IN CHICAGO.—Health Officer DE WOLF, of Chicago, has had $100,000 placed at his disposal for the purpose of improving the sanitary condition of the city. It is his intention to inspect 50,000 houses by the middle of August.

COCAINE.—It has been suggested according to *Gehe & Co.'s Handelsbericht*, that the leaves of the horse-chestnut tree (*Æsculus Hippocastanum*) may possibly contain cocaine or some related alkaloid possessing qualities similar to those exhibited by cocaine, this supposition being based upon the botanical relationship between the natural orders to which the plants belong.—*The Pharmacist*, June, 1885.

LEAD POISONING.—It has been found by Dr. Edison, of the Health Department of New York, that yellow vermicelli is colored with lead chromate, which is present to an extent representing three grains of metallic lead to each ounce of vermicelli.

GERMAN APOTHECARY SHOPS.—According to the *Chemiker-Zeitung*, of May 20, 1885, the average of twenty-four German cities gives less than one apothecary shop for every 10,000 inhabitants. Only medicines and drugs are sold in German apothecary shops—no patent medicines and other *staple* articles.

THE CHOLERA-BACILLUS COMMISSION OF INQUIRY.—DR. KLEIN has expressed his willingness to assist in the investigation proposed by Mr. Cheyne, provided Dr. Koch himself takes part in the inquiry.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 13, 1885, TO JUNE 19, 1885.

Captain J. Y. Porter, Assistant Surgeon, having been found incapacitated for active service by an Army retiring board, ordered to proceed to his home and report by letter to the Adjutant General of the Army. (S. O. 136, A. G. O. June 15, 1885.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 20, 1885.

Arthur, George, Passed Assistant Surgeon, granted leave of absence for one year, with permission to leave the United States.

Deane, C. W., Passed Assistant Surgeon, granted leave of absence for three months.

Cleborne, C. J., Medical Inspector, as member of Medical and Naval Examining Boards, Philadelphia, Pa., June 22, 1885.

Lippincott, George C., Passed Assistant Surgeon, detached from temporary duty, Naval Academy, and waiting orders.

Mackie, Benj. S., Surgeon, as member of Medical and Naval Examining Boards, Philadelphia, Pa., June 22, 1885.

Shafer, Joseph, commissioned an Assistant Surgeon, active list, June 12, 1885.

OFFICIAL LIST

Of Delegates and Members in attendance upon the Annual Meeting of the American Medical Association in New Orleans, April 28, 29, 30, and May 1, 1885.

ALABAMA.

State Medical Society.—Jerome Cochrane, Albert Goodwin, George A. Ketchum, Samuel P. Smith, E. Burbon Ward.

Bullock County Medical Society.—Charles Higgs Franklin, Sam. Mardis Hogan.

Sumter County Medical Society.—John C. Parham.

Walker County Medical Society.—Andrew McAdams Stovall.

Wilcox County Medical Society.—Lucius Ernest Starr.

Permanent Members.—James M. Collier, John P. Furniss.

By Application.—Wm. E. B. Davis.

ARKANSAS.

State Medical Society.—J. F. Blackburn, D. Christian, J. A. Dibrell, Sr., J. A. Dibrell Jr., Lorenzo P. Gibson, M. P. Hart, Wm. H. Hawkins, John W. Hayes, F. Jeffrey, James T. Jelks, James W. Jones, James M. Keller, W. B. Lawrence, Daniel A. Linthicum, Edward Meek, D. S. Mills, Thomas Edgar Murrell, Z. Orto, James A. Pipkin, D. J. Praitier, Hugh L. Rauth, J. S. Shibley, Thos. J. Woods.

College of Physicians and Surgeons.—Roscoe Greene Jennings.

Crawford County Medical Society.—Othello M. Boarland.

Hempstead County Medical Society.—A. N. Carrigan.

Little Rock and Pulaski County Medical Society.—John Robinett Watter.

Philips County Medical Society.—D. Ellis Byrd.

Sebastian County Medical Society.—Albert Dunlap.

Permanent Member.—J. A. Owens.

By Application.—Milton C. Boyce, Daniel C. Carrol, Isaac Folsom, William B. Foster, G. W. Hudson, Amos Jarmun Hughes.

CALIFORNIA.

State Medical Society.—Richard Beverly Cole, Anabel Mcgaughey Stuart.

COLORADO.

State Medical Society.—John W. O'Connor.

DAKOTA TERRITORY.

Medical Association.—William E. Duncan.

DISTRICT OF COLUMBIA.

Medical Association.—Alexander Y. P. Garnett, John B. Hamilton, William Lee, Joseph M. Toner.

Permanent Member.—J. H. Baxter.

FLORIDA.

State Medical Society.—Robert D. Murray, Job E. W. Smith.

Alachua County Medical Society.—Robert A. Lancaster.

Putman County Medical Society.—Joseph H. Warren.

Permanent Members.—George W. Betton, John P. Wall.

GEORGIA.

State Medical Society.—Robert Battey, Wm. D. Bizzell, Henry F. Campbell, Elijah Lewis Connally, Benjamin Robert Dostor, Wm. H. Elliott, James W. Flanders, James Arthur Fort, E. C. Goodrich, L. G. Hardman, Wm. Abram Love, Thomas M. McIntosh, Richard J. Nunn, Theophilus O. Powell, Everard H. Richardson, James Cary Solomon, T. Frank Walker, Jacob Weichselbaum.

Agusta Academy of Medicine.—Theodore Lamb.

Permanent Members.—J. W. Baily, Robert H. Jenkins, Alonzo J. Logan, Thomas S. Powell.

ILLINOIS.

State Medical Society.—Albert Henry Burr, G. M. Chamberlin, Edgar P. Cook, R. W. Crothers, Nathan S. Davis, Moses Gunn, John H. Hollister, Wm. Wright Jaggard, Herbert Judd, J. P. Matthews, Lewis L. McArthur, Liston H. Montgomery, Philip H. Oyler, Madison Reece, Arthur Rawley Reynolds, Robert Tilley.

Central Illinois Medical Society.—W. J. Chenoweth, Amos Lorin Morris.

Iowa and Illinois Central Medical Society.—John W. Cowden.

Southern Illinois Medical Society.—James I. Hale, John L. Hallam, John Thomas McAnally.

Adams County Medical Society.—Wm. A. Byrd, Virgil McDavitt, Abbey Fox Rooney, Michael Rooney.

Brainard District Medical Society.—Merritt Hurst, Farinda J. Shipp.

Chicago Gynecological Society.—Henry T. Byford, Charles Caldwell.

Chicago Medical Society.—A. E. Baldwin, Edmund James Doering, Albert Goldspohn, Ralph N. Isham, A. Reeves Jackson, John S. Marshall, Daniel Thurber Nelson, Harvey P. Newman, James H. Plecker, Henry J. Reynolds, Wm. P. Verity, George W. Webster.

Jo Davies County Medical Society.—Benj. F. Crummer.

Lake County Medical Society.—W. M. Sweetland.

McLean County Medical Society.—Wm. L. Pollock.

Military Tract Medical Association.—Hiram Nance.

Morgan County Medical Association. Thomas M. Cullimore, T. J. Pitner.

Wabash Valley Medical Association.—Mark Rowe.

Permanent Members.—Lander H. Baker, Robert N. Barger, John B. Felker, Samuel T. McDermith, W. H. McNary, John H. Rauch, James E. Sullivan.

INDIANA.

State Medical Society.—Orin Aborn, Ferdinand W. Beard, Charles Bowman, Elijah S. Elder, Vincent H. Gregg, Thomas B. Harvey, John H. Helm, James F. Hibberd, John Sloan, Albert R. Tucker.

Blackford County Medical Society.—C. Q. Shull.

Boone County Medical Society.—Mathew H. Bonnel, Robert E. Jones.

Dearborn County Medical Society.—M. H. Harding, George Sutton.

Dubois County Medical Society.—Toliver Wertz, Gershom P. Williams.

Fayette County Medical Society.—Joshua Chitwood.

Fountain County Medical Society.—Wm. C. Cole.

Hamilton County Medical Society.—H. S. Horr.

Jackson County Medical Society.—Samuel H. Charlton.

Madison County Medical Society.—Wm. P. Harter.

Marion County Medical Society.—Thomas N. Bryan, James W. Hervey, John T. Keegan, L. S. Todd.

Posey County Medical Society.—Wm. M. Holton.

Randolph County Medical Society.—Nelson T. Chenowith, Isaac N. Trent.

Rush County Medical Society.—Wm. S. Hargrove, Wm. H. Smith.

Wayne County Medical Society.—Samuel S. Boyd.

Whitley County Medical Society.—Martin Ireland.

Permanent Members.—Peter Drayer, T. B. Harvey, Wm. R. McMahon, Luther D. Waterman, J. R. Weist.

IOWA.

State Medical Society.—Asa B. Bowen, David S. Fairchild, Ira K. Gardner, Wm. H. Gibbon, H. A. Gilman, George F. Jenkins, Samuel S. Lytle, George O. Morgridge, S. N. Pierce, Joseph Emmett Sansom, Milton Granville Sloan, Wm. Watson.

Bremer County Medical Society.—Wm. M. Barber.

Buchanan County Medical Society.—Henry G. Brainerd.

Cedar Valley Medical Society.—D. W. Crouse, W. O. Richmond.

Central District Medical Society.—David J. Brookings.

Des Moines Valley Medical Association.—Columbus N. Udell.

Mitchell County Medical Society.—Wm. W. Blackman.

North Iowa Medical Society.—Luther Brown.

Scott County Medical Society.—P. M. Bracelin.

Upper Cedar Valley Medical Association.—Luther P. Fitch.

Washington County Medical Society.—James Carson Robertson.

Permanent Members.—Lewis Blanchard, E. H. Dudley, Homer C. Markham, E. C. Miller, Hiram Irving Nance, Washington F. Peck, Allen A. Ransom, Nathah Udell, Ira L. Welch, John L. Whitley, J. W. Young.

KANSAS.

State Medical Society.—Robert Aikman, Garrett R. Baldwin, F. M. Daily, James A. Hopkins, Winfield S. Mendenhall, M. R. Mitchell, Charles V. Mottram, W. L. Schenck, D. W. Stormont, W. J. Van Eman.

Crawford County Medical Society.—George W. Miller.

South Kansas Medical Society.—James T. Shepard, Oliver Perry Olinger.

South East Kansas Medical Society.—B. F. Hepler.

KENTUCKY.

State Medical Society.—Jonathan R. Bailey, Benjamin H. Blair, B. L. Coleman, Alexander Crawford, Fayette Dunlap, Lawson B. Hickman, Joseph A. Hodge, James H. Letcher, R. C. McHord, Louis S. McMurtry, Joseph Pott Thomas, W. H. Wathen.

Central Kentucky Medical Association.—Hawkins Brown.

Southern Kentuckey Medical Association.—George Beebe, John G. Brooks, A. T. Hobbs, W. W. Richmond.

Permanent Member.—Thomas B. Greenley.

By Application.—Hervey McDonald.

LOUISIANA.

State Medical Society.—Thomas J. Allen, Richard Hance Day, Wm. L. Dickson, James W. Dupree, Claibourne Alex. Duval, John B. C. Gazzo, D. Raymond Fox, Owen Palmer Langworthy, Samuel Logan, Christian D. Owens, Edward Boyer Price, Thomas B. Pugh, Arthur W. de Roaldes, Roberdean W. Seay, Paul von Seydenwitz, George Theodore Trezerant, William Dee White.

Orleans Parish Medical Society.—Paul Emile Archinard, Wm. G. Austin, Oscar Czarnowski, John Pintard Davidson, Felix Formento, Daniel Chemien Holliday, Percival B. McCutchon, Rudolph Matas, Fred William Parham.

Shreveport Medical Society.—David Hall Billin.

Permanent Members.—Stanford E. Chaillé, Jas. Cronan Egan, Chas. Henry, George J. Friedrichs, Ernest Sydney Lewis, George Newman Monette, Tobias G. Richardson, W. H. Watkins.

By Application.—Charles J. Bickham, Frank H. Brickell, Wm. E. Brickell, Thomas S. Dabney, Andrew G. Friedrichs, John G. A. Devron, Joseph Jones, Stanhope Jones, Geo. B. Lawrason, J. Th. L. Ch. Mentz Schuppert, Edward Taylor Shepard, Edmond Souchon, John M. Watkins, Thomas Jefferson Woolf.

MAINE.

State Medical Society.—Thomas Albert Foster, Alonzo Garcelon.

Permanent Member.—Seth C. Gordon.

MARYLAND.

Medical and Chirurg. Faculty.—Joseph E. M. Chamberlaine, John Morris.

Allegheny County Medical Society.—Thos. M. Healey.

Baltimore Academy of Medicine.—Herbert Harlan, W. C. Van Bibber.

Baltimore Clinical Society.—John S. Lynch.

Baltimore Medical and Surgical Society.—Wilmer Brinton.

By Application.—Oscar J. Coskery.

MASSACHUSETTS.

State Medical Society.—James Read Chadwick, John C. Irish, Henry O. Marcy, Asa F. Pattee, Alexander Doull Sinclair, Jacob L. Williams, Arthur Hervey Wilson.

Permanent Member.—Charles H. Shackford.

By Application.—George Minot Garland.

MICHIGAN.

State Medical Society.—Austin W. Alvord, James B. Book, Wm. Brodie, Carl Brumme, J. Henry Carstens, Leartus Connor, Louis W. Fasquelle, Simon S. French, Hugh McColl, Geo. E. Ranney, Horace Tupper, Columbus V. Tyler.

Detroit Medical and Library Association.—Eugene Smith, Henry O. Walker.

North-East District Medical Association.—Cyrus M. Stockwell, Anson R. Smart.

Southern Michigan Medical Association.—Robert Stephenson.

Union Medical Society of Northern Michigan.—John Avery, F. Josephus Groner.

Van Buren County Medical Society.—Ezra A. Palmer.

Wayne County Medical Society.—C. I. Lundy.

Permanent Members.—Charles W. Backus, Harvey Williams.

MINNESOTA.

State Medical Society.—Frederick A. Dunsmoor, John F, Fulton, A. O. Gilman, Thos. S. McDavitt, John H. Murphy.

Permanent Members.—Geo. S. French, Charles H. Hunter, Alexander J. Stone.

MISSISSIPPI.

State Medical Society.—Thos. T. Beall, Josiah Clinton Brooks, Josiah Chambers Dawson, S. R. Dunn, Thomas Weir Fullilore, John B. Pease, J. M. Taylor, R. S. Toombs, J. S. Walker.

Permanent Members.—Burnell Alex. Duncan, J. T. Hancock, Jonas Patrick Moore, J. A. Shackelford, Wm. A. Taylor, B. A. Vaughn.

By Application.—Edward L. McGehee.

MISSOURI.

State Medical Society.—T. C. Boulware, Fred Essig, Willis P. King, Eugene R. Lewis.

Grand River Medical Society.—Montgomery Bottom, Tinsley Brown, C. C. Leeper, Edwin Van Mole.

Hannibal Medical Society.—D. Howell Shields.

Jackson County Medical Society.—Flavel B. Tiffany.

Kansas City Medical Society.—James J. Choate, Jessie W. Johnson, Thomas B. Lester, Edward W. Schauffler, John Henry Thompson.

Lewis County Medical Society.—Robert J. Christie.

Linton District Medical Society.—Anthony W. Graham.

Moberly District Medical Society.—Benj. G. Dysart, Tilly Alexander Martin.

Rolla District Medical Society.—J. Turner Coffee, W. Arthur Metcalf.

St. Joseph Medical Society.—Jacob Geiger.

South-East Medical Association.—J. W. Cannon, Lemuel T. Hall.

South-West Medical Society.—Christopher C. Clements.

St. Louis Medico-Chirurg. Society.—George J. Engelman, Wm. Carr Glasgow, Herman Tuholske.

St. Louis Medical Society.—LeGrand Atwood, B. M. Hypes, Henry H. Mudd, P. Gervais Robinson, J. M. Scott, F. W. Wesselcr.

Permanent Members.—George Halley, Alexander J. Mullen, A. B. Sloan.

By Application.—W. F. Grimstead, John A. Mann, David LeMay Mitchell.

NEBRASKA.

State Medical Society.—F. G. Fuller, Alice Emily Huff, Samuel D. Mercer, L. F. McKenna, Richard C. Moore, Wm. S. White.

Permanent Members.—Wm. M. Knapp, Melville W. Stone.

By Application.—Charles A. Wilson.

NEW HAMPSHIRE.

State Medical Society.—John W. Parsons.

NEW JERSEY.

State Medical Society.—Wm. Pierson, Isaac N. Quimby.

Permanent Member.—B. A. Watson.

NEW YORK.

State Medical Association.—Edward Ames, Henry D. Didama, J. D. Dunning, Ellsworth Eliot.

New York Academy of Medicine.—L. Duncan Bulkley, Francis V. White.

West Chester County Medical Society.—Champion H. Judson.

Permanent Members.—Charles C. F. Gay, W. W. Potter, James R. Taylor, Hiram Wiggins, Cornelius C. Wyckoff.

NORTH CAROLINA.

State Medical Society.—Thomas D. Haigh, Newson J. Pittman.

Edgecombe County Medical Society.—George Lewis Wimberley.

Permanent Member.—Charles James O'Hagan.

OHIO.

State Medical Society.—Henry J. Donahoe, Richard P. Evans, Frank C. Larimore, Ephraim J. McCollum, Jonathan Morris, P. P. Pomerene, Caleb R. Reed, R. Harvey Reed, John C. Reeve, X. C. Scott.

Central Medical Society.—Norman Gay.

Cincinnati Academy of Medicine.—John L. Cleveland, W. W. Dawson, Sheridan C. Heighway, Edward Sydney McKee, Joseph Ransohoff, James T. Whittaker, E. Gustav Zinke.

Clermont County Medical Society.—Isaac Redrow.

Clinton County Medical Society.—S. B. Lightner.

Erie County Medical Society.—Charles Graefe.

Knox County Medical Society.—John W. Russell.

Montgomery County Medical Society.—W. J. Conklin.

North Central Medical Society.—Hiram R. Kelly.

North-Eastern Medical Association.—Joseph W. Shively.

North-Western Medical Association.—Frank D. Bain, Wm. J. Brenington, W. H. Philips.

Trumbull County Medical Society.—Albert G. Miner.

Wayne County Medical Society.—Hugh A. Hart, Abram H. Hunt.

Permanent Members.—James M. French, J. Frank Gabriel, David Watson, Alanson G. Willey.

By Application.—Leo W. Buckwalter, John J. McAchrane.

PENNSYLVANIA.

State Medical Society.—Peter Benjamin Breinig, Richard J. Dunglison, Geo. Benson Dummil, Levi S. Gaddis, Rensselaer Leonard, John B. Roberts, John V. Shoemaker.

Allegheny County Medical Society.—Jos. G. Connell, Wm. N. Mitler, Alex M. Pollock, Rhodes Stanbury Sutton, Joseph Dio Thomas.

Armstrong County Medical Society.—M. H. Alter.

Blair County Medical Society.—James Morrison Brown.

Bradford County Medical Society.—George Firman Horton.

Delaware County Medical Society.—J. F. M. Forwood.

Lackawana County Medical Society.—Isaiah F. Everhart.

Lancaster County Medical Society.—Wm. Compton, Abner Myers Miller.

Mercer County Medical Society.—Elisha Griswold.

Montgomery County Medical Society.—Francis S. Wilson.

Montom County Medical Society.—Robert S. Simington.

Northampton County Medical Society.—J. O. Berlin, Wm. B. Erdman.

Philadelphia County Medical Society.—Wm. T. Taylor, James C. Wilson.

Venango County Medical Society.—Adelbert F. Coope, John A. Ritchey.

Permanent Members.—Wm. B. Atkinson, S. P. Bartleson, Walter H. Parcels, Wm. B. Ulrich.

RHODE ISLAND.

State Medical Society.—Walter E. Anthony, Ariel Ballou, Simeon Hunt, Herbert Terry.

SOUTH CAROLINA.

State Medical Society.—Robert Alex. Kinloch, Charles W. Kollock, Thos. J. McKie.

Oconee County Medical Society.—Oliver M. Doyle.

TENNESSEE.

State Medical Society.—John E. Black, Duncan Eve, C. C. Fite, W. F. Glenn, W. D. Haggard, Whitson A. Harris, W. P. Jones, Van S. Lindsley, John Wesley Maddin, Jr., James Brickell Murfree, J. B. W. Nowlin, T. K. Powell, Newton Ford Raines, Deering J. Roberts, Dudley D. Saunders, F. B. Sloan, Geo. R. Williamson.

Tri-State Medical Society of Arkansas, Mississippi and Tennessee.—Alex. Grant Sinclair.

Knox County Medical Society.—B. B. Lenon.

London County Medical Society.—W. F. Foute.

Nashville Medical Society.—John P. McFarland, John Lindsay Watkins.

Rutherford County Medical Society.—James F. Byrn.

Shelby County Medical Society.—Samuel Treat Armstrong, F. L. Sim.

Tipton County Medical Society.—Mead Hale Jackson.

Permanent Members.—John Berrien Lindsley, Robert W. Mitchell, Samuel J. Morrison.

By Application.—Joseph A. Crook, Giles Christopher Savage, M. M. Smith, D. A. Walker.

TEXAS.

State Medical Society.—Wm. Allen Archer, Wm. T. Baird, Edwin Pinckney Bectou, Andrew D. Burroughs, Wm. Jefferson Burt, W. Paxton Burts, W. Caston, R. H. Chilton, John Joseph Dial, Henry Waller Dudley, W. A. East, O. Eastland, Francis C. Ford, Asa B. Gardner, Judson Wade Garnett, Henry Clay Ghent, Berthold E. Hadra, Geo. Parks Hall, Wm. G. Hayes, John C. Jones, Marshall D. Knox, J. H. McCain, John A. McGee, J. W. McLaughlin, James T. Meek, Frank O. Norris, James D. Osborn, W. W. Reeves, Jerome B. Robertson, Robert M. Rutherford, Bacon Saunders, Benjamin Franklin Smith, Jack Bryant Stinson, T. M. Stone, W. Wallace Walker, Otis Lawrence Williams, Rufus Green Williams.

West Texas Medical Association.—George Cupples, Frederick Terrell, Thos. J. Tyner.

Comanche County Medical Society.—Charles F. Paine.

Galveston County Medical Society.—Wm. Dennis Kelley, Cary H. Wilkinson.

Hill County Medical and Surgical Association.—Nathan Blount Kennedy, James John Robert.

Johnson County Medical Association.—C. C. Francis.

Travis County Medical Society.—F. E. Daniel, Frank A. Maxwell.

Waco Medical Society.—Wm. Louis Barker, J. H. Sears, John Henry Sears.

Williamson County Medical Society.—Wm. Thomas Jones.

Permanent Members.—Elias James Beall, Hiram Henry Darr, John H. Pope, R. B. White, W. H. Wilkes, Joe Selman Willis, John T. Wilson.

By Application.—Daniel Bigelow Blake, Sam. R. Burroughs, Ashley Wilson Fly, Oliver J. Halbert, Ferdinand Herff, Henry A. Hughes, John F. Y. Paine, Michael Perl, E. W. Sanderson.

VERMONT.

State Medical Society.—Edward Fisk Upham.

VIRGINIA.

State Medical Society.—Isaac S. Stone, Joseph A. White.

Permanent Member.—Wm. Cecil Dabney.

WEST VIRGINIA.

State Medical Society.—George Baird, Fleming Howell.

Medical Society of Wheeling and Ohio County.—Chas. M. Frissell, John H. Pipes.

WISCONSIN.

State Medical Society.—John Knowlton Bartlett, George E. Catlin, George W. Jenkins, Darius Mason, S. S. Riddell, John S. Walbridge, R. M. Wigginton, W. B. Worley.

Iowa County Medical Society.—Wm. L. Tallman.

North-Western Medical Society.—Edward F. Eldridge.

Verein Deutscher Aerzte, in Milwaukee.—Nicholas Senn.

North-Western Inter-State Medical Association (Wisconsin and Minnesota).—Charles Alexander.

UNITED STATES ARMY.

Medical Department.—John S. Billings, Henry McElderry, Joseph R. Smith.

UNITED STATES NAVY.

Medical Department.—David Kindleberger, George Peck.

U. S. MARINE HOSPITAL SERVICE.

John Godfrey.

The following were invited to seats with the Association:—G. Barrœta, San Luis Potosi, Mexico; John N. Gilmore, Gaston, Alabama; C. R. Henderson, Deasonville, Mississippi; J. E. Howe, Greenfield, Iowa; John E. Johnson, Lebanon, Indiana; Edward W. Jones, New Orleans, Louisiana; Sterling D. Kennedy, New Orleans, Louisiana; John Clay Mackowen, Jackson, Louisiana; J. Park McGee, Tuscola, Illinois; John Ames Mead, Perthington, Mississippi; Wm. L. Moor, Tallahassee, Florida; Robert C. Myles, Myles, Mississippi; Robert Patrick, Fort Adams, Mississippi; James B. Pendergras, Jefferson, Louisiana; Bolling A. Pope, New Orleans, Louisiana; Chas. A. Rockwood, Nevada, Missouri; Elias A. Rowan, Wesson, Mississippi; Arthur F. Sanders, Hot Springs, Arkansas; M. K. Taylor, U. S. A., Fort Sill, Indian Territory; H. B. Ward, Cuba, Alabama; Max E. Witte, Mt. Pleasant, Iowa.